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Financing Higher Education in the United States

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FINANCING HIGHER EDUCATION IN THE UNITED STATES

ECONOMICS DEPARTMENT WORKING PAPER No. 584

By

Peter Tulip

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ABSTRACT/RESUME

Financing higher education in the United States

America's higher education system is among the best in the world. Nevertheless, there is scope for improvement. In particular, there appear to be substantial financial barriers to higher education despite large government expenditures aimed at promoting access. Policy makers have proposed addressing these barriers by increasing student grants. However, grants are costly, inefficient, inequitable and ineffective. Income tax concessions and state government subsidies suffer from similar problems. In contrast, international best practice seems to be converging on student loans with repayments that vary according to income. Income-contingent loans facilitate access to college at low fiscal cost and without the inefficiency and inequities that accompany grants, subsidies or tax concessions. At the same time, they do not discourage risk-averse or uninformed students in the way that conventional loans do. The United States has an income-contingent loan programme that should be expanded. While the design of repayments could be improved, the main problem with this programme is that lending limits are too low. Higher limits, especially for unsubsidised direct loans, would benefit students and promote access at little cost to the government. Were a good system of loans in place, then less cost-effective means of promoting access, such as grants and tax concessions, should be cut back.

JEL classification codes: H52; I22.

Key words: Education; United States; Income-contingent loans; Pell grants.

Financement de l'enseignement supérieur aux États-Unis.

L'enseignement supérieur américain compte parmi les meilleurs du monde. Cependant il y a des améliorations à apporter dans plusieurs domaines. En particulier il existe d'importantes barrières financières à l'entrée dans l'enseignement supérieur malgré d'importantes dépenses publiques destinées à en promouvoir l'accès. Les responsables politiques ont proposé d'alléger ces barrières en augmentant les bourses d'étudiants. Cependant les bourses ont un coût budgétaire élevé et sont d'une efficacité et d'une équité douteuses comme le montre l'étude. Les réductions d'impôt sur le revenu et les subventions de l'État souffrent des mêmes problèmes. Par contre, ce qui semble le mieux fonctionner au niveau international est le prêt aux étudiants avec des remboursements adaptés aux revenus. Des prêts conditionnés aux revenus faciliteraient l'accès à l'enseignement supérieur pour un faible coût fiscal, et sans l'inefficacité et l'iniquité qui accompagnent les dotations, subventions et réductions d'impôt. En même temps ils ne décourageraient pas les étudiants mal informés ou réticents à prendre des risques, comme le font les prêts conventionnels. Les États-Unis ont un programme de prêts aux étudiants remboursables selon le revenu, il devrait être développé. Tandis que l'aménagement des remboursements devrait être perfectionné, le principal problème de ce programme reste que le plafond des prêts est trop bas. Un plafond plus élevé, surtout pour les prêts directs non subventionnés, profiterait aux étudiants et encouragerait l'accès aux études supérieures avec un moindre coût pour les pouvoirs publics. Une fois un bon système de prêts en place, les moyens à moindre coût effectif pour promouvoir l'accès, tels les subventions ou remises d'impôt, pourraient être réduits.

Codes JEL: H52 ; I22

Mots clés: Education ; Etats-Unis ; Prêts remboursables selon le revenu ; Bourse Pell.

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FINANCING HIGHER EDUCATION IN THE UNITED STATES

By Peter Tulip¹

1. The United States' system of higher education² is widely seen to be the best in the world. That assessment has a large subjective component; nevertheless, it appears to be consistent with objective indicators of quality. For example, United States colleges and universities offer more choice, their graduates receive greater wage premiums, and they attract more than twice as many foreign students as any other country. 17 of the best 20 research universities in the world are in the United States, according to the Shanghai Jiao Tong University.
2. The success of the US system of higher education is often attributed to its competitive and decentralised structure. These features distinguish it (in varying degrees) from both higher education in other countries and from primary and secondary education in the United States. Hoxby (1999) provides a discussion. Any changes need to build on these strengths.
3. There appears to be scope for improvement, however. The United States' lead is more obvious in research than in teaching (though this may reflect difficulties in measuring the latter). And in some areas other countries are overtaking. For example, whereas the United States had the highest tertiary attainment rate in the OECD a generation ago, it is now ranked 8th in tertiary attainment among 25-34 year olds. Enrolment rates are now below the OECD average.³ The recent report of the Secretary of Education's Commission on the Future of Higher Education (2006), known as the Spellings Commission, "found ... much that needed urgent reform". The Commission and others have pointed to serious problems in the areas of accountability, quality, transparency, cost control, diversity and many other aspects of higher education. Box 1 outlines the Administration's response to the report. Furthermore, the newly elected Congress has its own priorities.
4. Against this background, this paper addresses the issue of how governments, particularly the federal government, should be involved in the financing of higher education. The focus is on the efficiency and equity of support rather than its level. This is not to say that financing is necessarily the most important issue facing higher education. For example, it can be argued that inadequate prior academic preparation is a greater problem. However, a companion paper (Tulip and Wurzburg, 2007) discusses the performance of US high schools. Moreover, governments spend about two per cent of GDP on higher education, primarily to promote access. How well that money is spent seems worth considering. Especially so, given that policy-makers plan to substantially expand current programmes and that international experience suggests better approaches are possible.

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1. This paper is based on material presented in the *OECD Economic Survey of the United States* published in May 2007 under the authority of the Economic and Development Review Committee (EDRC). The author would like to thank Val Koromzay, Andrew Dean, Jorgen Elmeskov, Patrick Lenain, Hannes Suppanz, Greg Wurzburg, Thomas Weko and Richard Yelland for valuable comments. The paper has also benefited from discussions with numerous US experts, including from the government. Special thanks go to Laure Meuro for technical assistance and to Chrystyna Harpluk and Deirdre Claassen for technical preparation. The author can be contacted at ptulip@frb.gov.
 2. This paper uses the terms higher education, tertiary education, postsecondary education and college interchangeably, though colleges are often distinguished from trade and graduate schools.
 3. In 2004, 23.4% of US 20-29 year olds were enrolled in education, compared with an OECD average of 24.7%. Enrolments for other age groups are also at or slightly below the OECD average. (*Education at a Glance, 2006*, Tables A1.3a, c1.2).

Box 1. Secretary Spellings' action plan for higher education

In September 2006, the Commission on the Future of Higher Education, known popularly as the Spellings Commission delivered its final report, *A Test of Leadership*. The Commission comprised 19 diverse and prominent experts on higher education. It found that "US higher education needs to improve in dramatic ways" changing from "a system primarily based on reputation to one based on performance." In responding to the Commission's report, Secretary of Education Margaret Spellings announced an Action Plan. The Secretary's proposals were as follows:

Accessibility

- Strengthen K-12 preparation and align high school standards with college expectations.
- Work with Congress to expand the successful principles of the *No Child Left Behind Act* to high schools.
- Redesign the 12th-grade NAEP (Nation's Report Card) test to provide state-level estimates of college and workforce readiness.
- Raise awareness and mobilise leadership to address the issue of adult literacy as a barrier to national competitiveness and individual opportunity.
- Develop a federal research agenda for adult literacy to identify strategies, models and programmes that work.

Affordability

- Simplify the process by partnering with states to use existing income and tax data to help students complete the Free Application for Federal Student Aid (FAFSA) in half the time.
- Notify students of their estimated aid eligibility before spring of their senior year in high school.
- Work with Congress to provide new funds for need-based aid through the federal financial aid system.
- Commission an independent management consultant review of the federal financial aid system.
- Revitalise the Fund for the Improvement of Postsecondary Education (FIPSE) to promote innovation and productivity.
- Encourage organisations that report annual college data to develop consistent affordability measures.

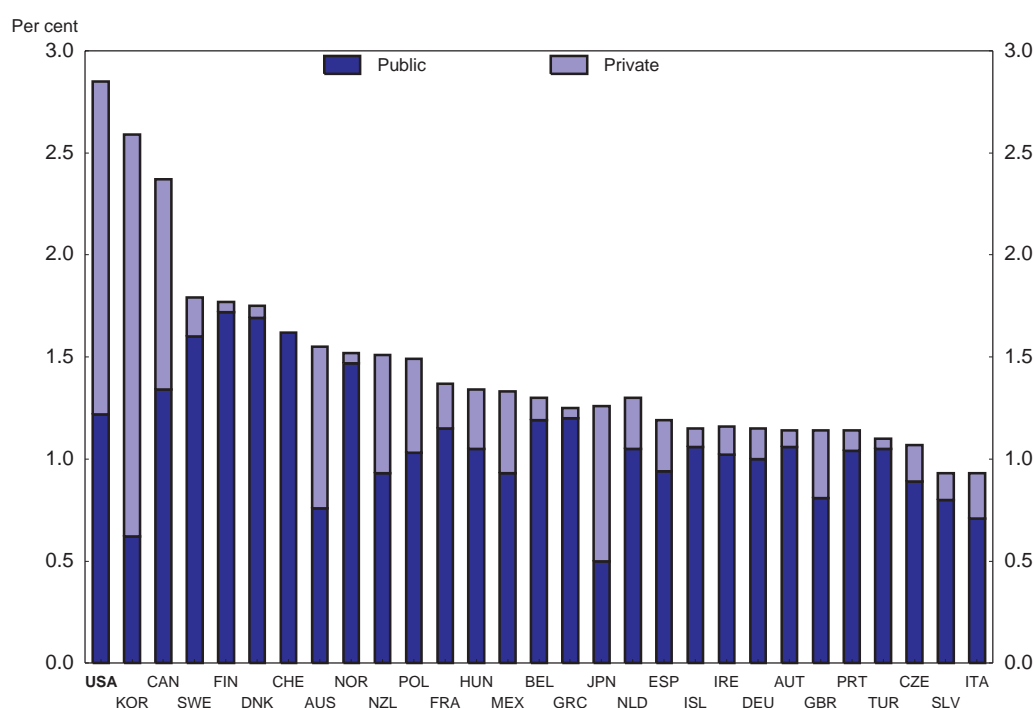
Accountability

- Work with a consortium of states to build on and link together the 40 existing, privacyprotected higher education information systems.
- Explore incentives for states and institutions that collect and report student learning outcome data.
- Convene members of the accreditation community to recommend changes to the standards for recognition that will place a greater emphasis on results.
- Redesign the Department of Education's college search website to allow consumers to weigh and compare institutions based on their individual interests and needs.

Background

5. International comparisons of tertiary education are difficult, because institutional structures vary greatly across countries. Nevertheless, the available data indicate that the United States spends much more on higher education than other countries. In 2003, it devoted 2.9% of its GDP to tertiary education, about twice as much as the OECD average. As shown in Figure 1, this reflected unusually large private expenditures, with public spending being in line with other countries.⁴ The high level of expenditure reflects near average enrolments but very high per-student expenditure. In 2003, the United States spent \$19 500 on core tertiary educational services per student, more than twice the OECD average of \$7 800.⁵ Most of the high per-student spending reflects high US income. Across countries, spending on tertiary education increases roughly proportionately with GDP per capita. (*Education at a Glance*, Chart B1.6)

Figure 1. Expenditure on tertiary education institutions
Percentage of GDP, 2003

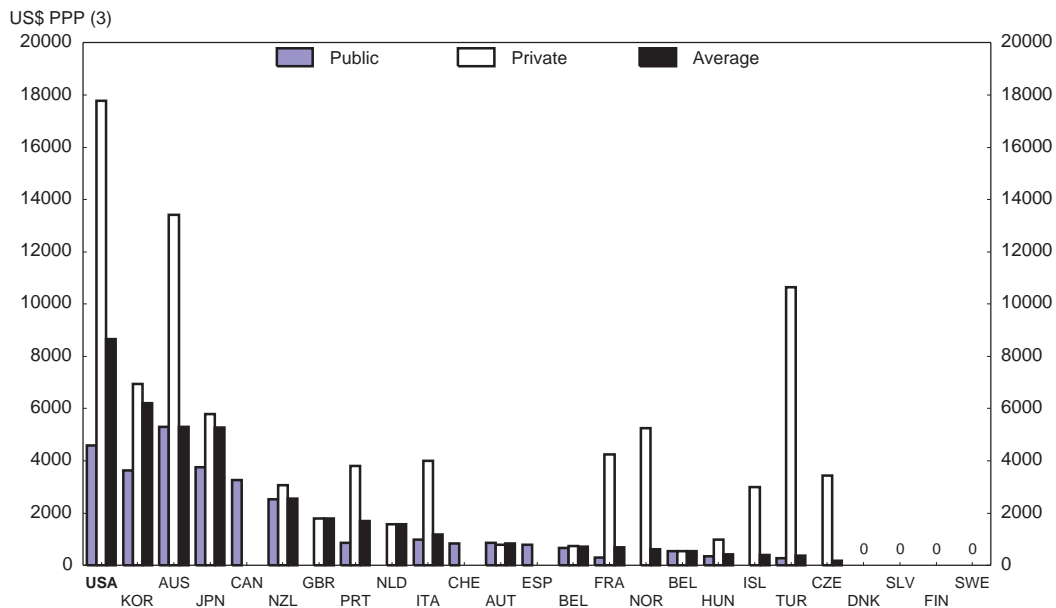


Source: OECD, *Education at a Glance*, 2006, Table B2.1b.

6. High private expenditures reflect unusually high tuition fees (Figure 2). The average published tuition fee in the United States, at \$8 700 a year in 2003, was almost five times the OECD average of \$1 800.

-
4. The public/private split is only approximate, as countries differ in how they classify expenditures. For example, most countries have their public expenditures artificially boosted by valuing student loans at principal, whereas these are (appropriately) valued at their subsidy cost in the United States. And the estimates do not include tax concessions.
5. These estimates exclude research and development and ancillary services like student housing; *Education at a Glance*, Table B1.1c.

Figure 2. Average tuition fees¹
Tertiary type-A institutions, 2003²



1. Countries are ranked by average tuition fee, weighted by full-time enrolment.
2. In the US, Tertiary type-A institutions mainly comprise bachelor's degree programmes, but also include master's and professional degrees and some academically-oriented associate's degrees.
3. Where data is provided as a range, the midpoint is used.

Source: Based on OECD, *Education at a Glance*, 2006, Table B5.1.

7. Another striking feature of US higher education is its diversity. About three-quarters of full-time undergraduates attend public institutions, about one-fifth attend private nonprofit institutions and a small fringe attend private for-profit institutions. The public sector is divided between 4-year institutions and 2-year community colleges – the latter are more vocationally oriented and most students attend part-time. Public institutions receive most of their funding from state governments and set tuition fees that are relatively low by US standards. At private schools, fees are higher and more variable, with top-tier schools (such as Harvard, Chicago and Stanford) charging between \$32 000 and \$34 000 a year. However, published fees (referred to as the “sticker price”) overstate actual costs due to discounting, grants and tax benefits. These reduce costs at private 4-year institutions by an average \$9 000, with smaller reductions at public institutions. Table 1 shows one measure of fees before and after grants, as estimated by the College Board (2006a).⁶

6. The cost of tertiary study can be estimated in different ways, depending on the purpose. For example, Table 1 does not include loans or work-study aid. And the net price, as calculated, is negative for many students – reflecting that many grants cover living costs as well as tuition. For many purposes, other assumptions would be appropriate. Alternative estimates for the 2003-04 academic year are available in Berkner and Wei (2006). After allowing for inflation, their estimates (specifically “net price after all grants, veterans benefits and estimated tax benefits” as reported in their Figure H) are similar to those in the “Total” column of Table 1, though they do not report a price net of grants and tax concessions that one would add to foregone earnings, as discussed in the text.

Table 1. Average tuition and other expenses: 2006-07 academic year

	Share of full-time enrolment (%)	Average published tuition and fees (\$)	Average net price ¹ (\$)	Living expenses ² (\$)	Total (\$)
Private four year	20	22 200	13 200	11 100	23 300
Public four year	45	5 800	2 700	10 500	13 200
Public two year	25	2 200	100	10 000	10 100

1. Average net price is calculated by subtracting average grant aid from all sources and tax benefits per full-time student from the published price.

2. Living expenses include room and board, transport, books, supplies and miscellaneous expenses. Estimates are for residents at four-year institutions and commuters at two-year public institutions.

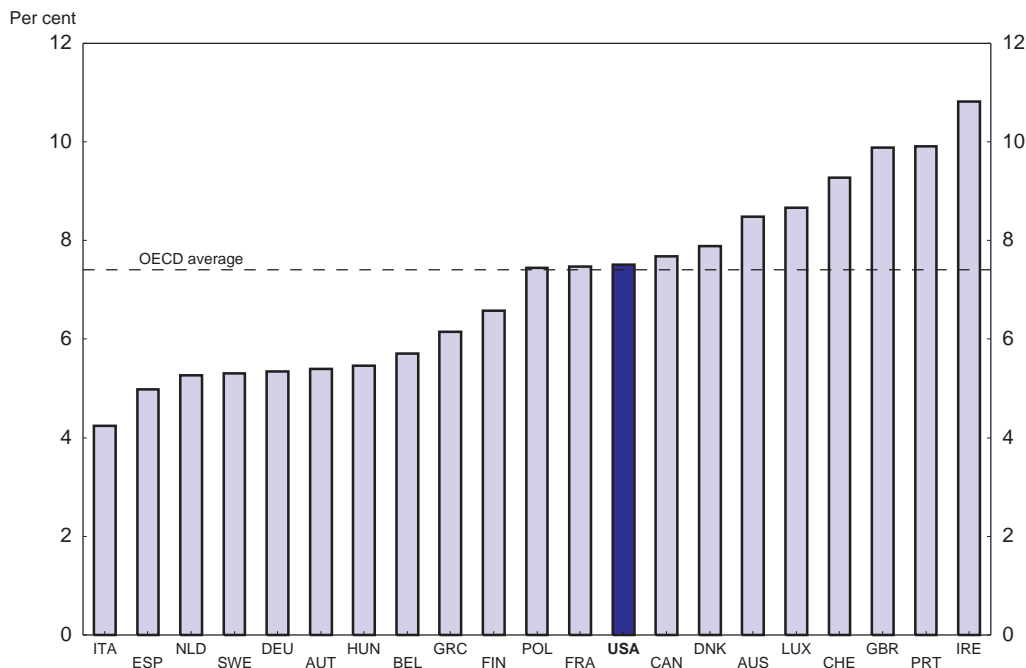
Source: College Board (2006a) *Trends in College Pricing*.

8. On top of net tuition charges, students need to pay for room, board and other living costs, which often amount to around \$ 10 000 to \$ 11 000.⁷ Putting these together, a student considering going to college faces the prospect of spending an average \$ 10 000 to \$ 23 000 a year, depending on the institution. This “cost” is the relevant barrier for liquidity-constrained students worried about whether they can afford to enrol. An alternative measure of cost recognises that living expenses would be incurred anyway. For students with ready access to finance, the decision is not whether they *can* go but whether they *should*. For this decision, the relevant cost is foregone earnings plus net tuition. The median annual earnings of a 20-year-old high school graduate was \$ 22 000 in 2005. On this basis, the average cost of enrolment varies from \$ 22 000 to \$ 35 000, depending on the type of institution. Note that regardless of whether the cost is measured using living expenses or foregone earnings, either of these elements far exceeds net tuition charges. Contrary to the popular misapprehension, it is only at a small number of very expensive institutions that tuition and charges represent the major barrier to college attendance. For the large majority of college students, the main barrier is the need to cover living expenses while forgoing normal paid employment.

9. In return for these investments, college graduates then receive a much higher salary. In 2005, the median 35-44 year old bachelors degree holder earned \$ 54 800 – some 70% more than the median earnings (\$ 32 200) of a 35-44 year old with only a high-school diploma. (College Board, *Education Pays*, 2006c) When allowance is made for taxes, financial assistance, different employment probabilities and so on, OECD estimates suggest that the average return to tertiary education is 7½ per cent a year, in real terms (Figure 3). This is close to the OECD average return, with the effect of high tuition fees being offset by relatively high wage premiums.

10. For policy purposes, the more interesting benchmark is the domestic real interest rate. Students earn a much greater return on their investment in education than they do on alternative investments. For example, the real pre-tax return on government bonds is about 2% in the United States. For borrowers, no prevailing interest rate serves as an obvious benchmark (arguably due to market failures discussed in the following section). The most common rate, on federal government Stafford loans (discussed in detail below) has a real after-tax rate of about 2%. Hence for the average student, going to college represents a very profitable investment in human capital.

7. Conceptually, it would be preferable for books and supplies, which typically average about \$ 900, to be classified as a tuition cost, rather than a living expense, but unfortunately that is not the custom.

Figure 3. Internal rates of return to tertiary education,¹ 2001²

1. Average of estimates for men and women. Labour productivity is assumed to grow at 1.75%.

2. Except Poland and Switzerland: 2000 and Hungary: 1997.

Source: Oliveira Martins, J., *et al* (2007),.

11. Given that the estimated returns substantially exceed available interest rates, why do not more students go to college? Part of the reason is that the estimates above refer to the average student. Some potential students may expect to receive lower than average returns. However, the more common explanation, discussed in more detail below, is financial barriers. There is a widespread perception that many students do not have the resources to undertake college education.

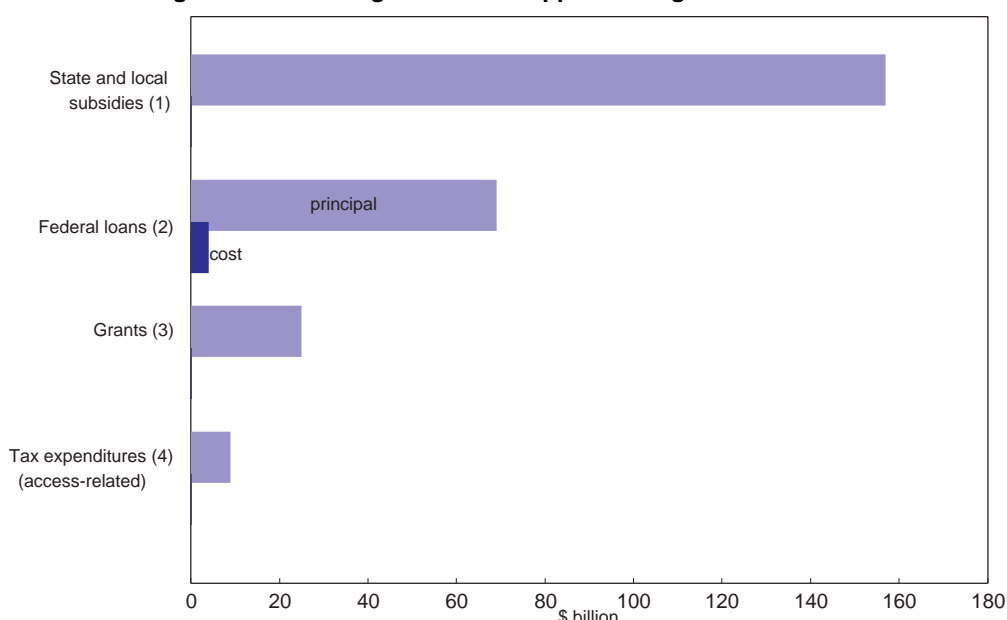
12. Private markets, on their own, do not efficiently finance investments in education. Private loans are usually not available unless the borrower has a guarantee from the government or credit-worthy co-signer. This failure partly reflects the difficulty of ensuring repayment – unlike physical capital, human capital cannot be used as collateral. Wealthy families have traditionally dealt with this market failure by financing education through accumulated savings. However, this option is not available to potential students with poor or ungenerous parents. Even middle class parents find this difficult, particularly if they have several children or tuition fees are high.

13. The inability of poor families to fund their children's education is a problem in terms of both efficiency and equity. Accordingly, governments intervene to rectify this. In the United States, this intervention has many forms, of which the main ones are: state provision, grants, student loans, and tax concessions. (Governments also intervene in higher education for other purposes, such as research). Figure 4 provides some perspective on the size of these four programmes, though data availability makes comparisons inexact. Moreover, loans can be valued either at principal (the amount lent) or at budgetary cost (subsidy value), depending on the purpose. Valuing loans at cost and ignoring differences of timing, expenditure on these four programmes sums to about \$ 200 billion a year or 2% of GDP. This is somewhat higher than the estimates in Figure 1, due to differences in timing, coverage and definition. For example, Figure 1 excludes tax expenditures and grants for living expenses. Direct provision through locally and state-supported colleges and universities is by far the most expensive government intervention.

14. This paper discusses these four programmes in rough order of the importance of the policy recommendations. So, after discussing the adequacy of current policy, the discussion below leads with loans, and then considers grants, tax concessions and subsidies.

15. The focus is on the effect of these policies on financial barriers, as issues of access dominate the US debate and are used to justify substantial government expenditures. That contrasts with debates in other countries, where externalities are often emphasised and the key question is the level of funding. In the United States it is typically assumed that current levels of support substantially exceed levels justified by relevant externalities. Surveys of higher education financing in the United States (Gruber, 2005; Kane, 1999; or McPherson and Shapiro, 2006) attach minimal importance to externalities. Whether that assessment is valid is difficult to say – empirical research providing little guidance. That makes it difficult to make strong recommendations on the overall *level* of support. In contrast, there is a great deal to be said about *how* governments should intervene. Because existing forms of support are inefficient, better policy could deliver more access at lower cost.

Figure 4. Selected government support for higher education



1. State and local subsidies represents payments to institutions (not students) for 2001-2002 (*Digest of Education Statistics*, 2005, Table 28).
2. The \$ 69 billion of federal loans received by students in 2005-06 (College Board, 2006b, Table 1) came with an *ex post* budgetary cost of \$ 33 billion (most of which reflected increased subsidies for previously originated loans). Without unanticipated falls in short-term interest rates and their consequent cost of consolidations, the *ex ante* cost of student loans is budgeted to be \$ 3 to 5 billion a year for the next decade (CBO, 2007, Table 3-3).
3. Grants reflect Federal and State (but not institutional) grants for 2005-06, from College Board, 2006b, Table 1.
4. Tax expenditures are for fiscal year 2006 from OMB (2006). Related expenditures are listed in Table 8 below.

Source: See notes above.

More needs to be done

16. The substantial expenditures shown in Figure 4 do not appear sufficient to overcome financial barriers or to ensure access to higher education. To be more precise, there appear to be students for whom the benefits of higher education exceed the cost, but who do not enrol because they are unable to get finance.

17. In support of this claim it is often pointed out that children from wealthy families are much more likely to attend higher education than those from poorer families. But in itself, this is not convincing. Children from poorer families are likely to have less success at high school. So it may be that the difference in college enrolment reflects educational barriers rather than short-term financial constraints.

18. More persuasive then, are differences controlling for both education and family background. As shown in Table 2 the lowest performing students from rich families had essentially the same enrolment rate (77%, the upper-right cell) as the highest performing students from poor families (78%, the lower left cell). These comparisons can be interpreted in different ways. For example, academic achievement, as measured in these tests, may be a poor guide to college-readiness (Heckman). However, the usual interpretation is that “poor and smart” students are more qualified for college than their “rich and dumb” counterparts, but a lack of financial resources turns them away.

Table 2. College enrolment rates by income and achievement levels; 1994

Percentage of high school graduates attending post-secondary education with two years

Achievement levels (in quartiles)	Low-income	Middle-income	High-income
First (low)	36	49	77
Second	50	66	85
Third	63	79	90
Fourth (high)	78	89	97

Source: USDoe, NCES Condition of Education 1997 p. 64. Based on National Educational Longitudinal Study for High School Class of 1992.

19. Further evidence comes from differences in the sensitivity of enrolment rates. Enrolments appear to be relatively insensitive to future benefits or costs. For example, the dramatic widening of wage differentials over the 1980s raised the net present value of a college degree by over \$100 000.⁸ But the college enrolment rate rose only a modest 7 percentage points, from 65% to 72% (NCES, *Condition of Education*, 1997, p. 64). In contrast, a wide body of research finds much greater sensitivity to most determinants of current cash-flow. For surveys, see Kane (2002), Dynarski (2002) or Long (2007). This research suggests that to achieve a 7 percentage point increase in enrolments would only require a reduction in net cost per year of \$ 1 000 to \$ 2 000. The insensitivity to longer run returns, coupled with responsiveness to short-term cash-flow, is consistent with the view that many marginal students are constrained by limited finance.

20. There are many other pieces of evidence that point to limitations on the availability of finance. This includes the above-normal returns to higher education, the higher-still returns to marginal students (such as those living far from colleges), students working part-time for low pay (postponing graduation), and much greater sensitivity to costs by students with low family incomes (see Kane, 1999, 2006; Card, 2000). However, all of these are subject to alternative interpretations. Cameron and Heckman (1998) and Carneiro and Heckman (2002), for example, express scepticism.

21. One common response to this research is to point out that private loans for higher education have grown quickly. (For information on private loans, see Institute for Higher Education Policy, 2006). Some

8. Among 25-34-year-olds, the annual earnings differential between high-school and college graduates widened from \$ 7 100 to \$ 14 600 between 1980 and 1992, in 1990 dollars (Kane, 2006, p. 1392). The differential for older workers widened somewhat more. Summing \$ 7 500 over 40 years at a discount rate of 6% yields a net present value of \$ 112 000. A small fraction of this was offset by the increase in real tuition fees.

commentators assume that this has solved the problem of access. However, although private loans are now widespread, they are not universal. They typically require a credit-worthy co-signer, such as a parent. Many students, such as “independent” Pell grant recipients, cannot provide this. Some loans are available without a guarantor, but these are for professional students, not the typical undergraduate. So the popularity of private loans does not remove the need for policy measures to ensure access.

22. Admittedly, these issues are controversial. The important point may be that there is a large body of research that supports the view that financial barriers prevent many students from undertaking worthwhile study. However, the extent to which this research clearly establishes that hypothesis is subject to debate.

23. In addition to the formal research there is also a great deal of anecdotal evidence. Financial aid advisors, career guidance counsellors and others who deal with high-school leavers suggest that financial barriers are decisive in preventing many students going to college. The popular media routinely runs stories of potential students that “could not afford to go to college”. And many policy makers say they are personally aware of examples. That kind of evidence may not persuade researchers, but it appears to be influential within the higher education community and broader policy circles. At that level, there seems to be a consensus that financial barriers to education are important and that more needs to be done about this. Although the academic debate may not be resolved, the political debate seems more settled.

24. The most recent expression of this consensus is the report of the Spellings Commission. It concluded that:

“Access to higher education in the United States is unduly limited by ... persistent financial barriers ... There is ample evidence that qualified young people from low-income families are far less likely to go to college than their similarly qualified peers from high-income families” (Commission on the Future of Higher Education, 2006, p. 7).

Accordingly, it called for an enormous increase in needs-based financial grants. In particular, “to increase the purchasing power of the average Pell Grant to a level of 70% (from 48% in 2004-05) of the average in-state tuition at public four-year institutions over a period of five years” (p. 18). This would involve a real increase of about two-thirds in Federal Pell grant expenditure, at a total cost of perhaps around \$8 billion (assuming tuition continues to increase at recent rates). The Administration and Congress have responded very positively to these proposals. At the time of writing, (Spring, 2007) it is expected that large increases in Pell grants will be included in the next budget.

25. The political reality is that there are strong pressures on policy makers to ameliorate perceived financial barriers. The important question is not *whether* policy should aim to reduce financial barriers, but *how*. The following subsections discuss the four main ways in which governments support higher education.

Loans

Raising the Stafford loan limits

26. The US government has several student loan programmes, of which the most important are “Stafford” loans. These come in two varieties. “Direct” student loans are from the federal Department of Education, while “guaranteed” student loans are from private banks for which the government guarantees repayment. In 2005, 23% of Stafford loans were made through the direct student loan programme. Stafford Loans may be “subsidised” or “unsubsidised” the difference being that no interest is charged on subsidised loans until 6 months after graduation. Legislation currently before Congress would substantially lower the interest rate on subsidised loans. About half the Stafford loans originated in 2005-06 were subsidised.

Other loan programmes include PLUS loans made to parents and Perkins loans distributed by schools. Individual loans (including loans from different programmes) can be “consolidated” or joined together in one loan.

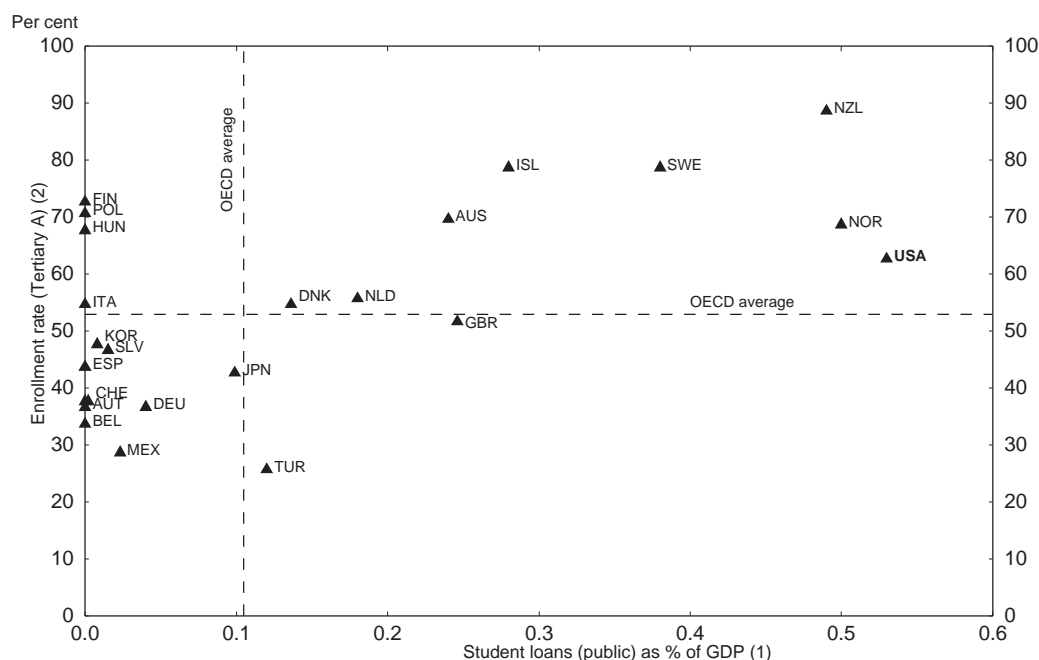
27. The Stafford loan programme has many attractive features relative to loan programmes in other countries. Loans are available for both tuition fees and living costs. They are available to almost all students, albeit up to differing limits. Subsidy levels vary but tend to be light. And repayments can vary with post-graduation income. Several of these features, particularly the last two, are discussed below.

28. The cost to the government of Stafford loans varies. Loans originated since July 2006 have an interest rate of 6.8%. This is about 2 percentage points above the current government 10-year bond rate of 4¾ per cent. Costs of administration and of default are difficult to estimate, but may each add about 1½ percentage points a year (CBO, 2005), which is partly offset by a one-off origination fee of up to 3%. Overall, the cost to the government of direct unsubsidised Stafford loans is small and possibly negative. Costs for subsidised loans, guaranteed loans and loans originated before July 2006 are higher.

29. In assessing subsidy levels, the tax deductibility of interest payments may also be relevant. This deduction reduces interest payments (for those below an income threshold) by the marginal income tax rate. Assuming a marginal (federal, state plus local) rate of say 35%,⁹ the effective interest rate is about 4.4%, which would seem significantly subsidised. But arguably, the tax deduction should not be seen as a subsidy but as a counterpart to the tax on the return from the investment. Viewed that way, the subsidy is small. That is important because it means fiscal constraints are not an argument against expansion of this aspect of the programme.

30. Student loans have been found to modestly increase college attendance, persistence and choice (GAO, 2005, p. 29). For example, Long (2004, cited by GAO, 2005) found that a \$ 1 000 increase, in 1977 dollars, resulted in a 4.3 percentage points increase in college enrolment among dependent students with family incomes below \$ 15 000. Dynarski (2003) found a similar response among wealthier students to increases in the subsidy value of loans. These results contrast with research on Pell grants which, as discussed below, has often found little if any effect. In international comparisons, countries with large student loan programmes tend to have above-average enrolment rates (Figure 5) and graduation rates. It is not clear in which direction the causation of this relationship runs, but it is consistent with the view that loans facilitate access to college.

9. This sums federal, state and local rates, plus an allowance for phase-out of other deductions.. In many states and localities, taxes are levied on the basis of federal taxable income (that is, net of tuition and other deductions). Other jurisdictions use gross income. The estimate in the text, which is intended as an illustrative approximation, is a rough average, based on conversations with Federal officials.

Figure 5. Student loans and entry rates, 2003

1. Loans are valued at principal.
2. The US entry rate is for both Tertiary-type A and type-B institutions.
3. The entry rate is the proportion of people entering tertiary type A programs for the first time. It differs from enrolment rates in that comparability between countries is not distorted by different course lengths.

Source: Based on OECD, *Education at a Glance*, 2006, Tables C2.1 and (except USA) B5.2. US loans are taken from College Board (2006b).

31. Perhaps the main problem with the Stafford loan programme is that there are low limits on how much students can borrow, as set out in Table 3.

Table 3. Limits on Stafford loans, as of July 2007

Year of enrolment	Dependent (\$)	Independent (\$)
First	3 500	7 500
Second	4 500	8 500
Third and fourth	5 500	10 500
Undergraduate lifetime limit	23 000	46 000
Graduate or professional per year		20 500
Graduate or professional lifetime limit		138 500

32. These limits fall far short of the total cost of study for most students, especially undergraduates. They do not cover living expenses, let alone tuition. Accordingly, they are often binding. Among the 33% of dependent students who took out Stafford loans in 2004, about 60% borrowed the maximum amount (Institute for Higher Education Policy, 2006, Table 6). Many professional, graduate and other independent students also borrow up to their limits, even though these are much higher. Significant increases in limits have been proposed in the 2008 budget (for example, the annual limit for third and fourth year undergraduates would rise to \$ 7 500). However, these limits still fall well short of the cost of attendance.

33. For subsidised loans, the limits can be justified by budgetary considerations. However, for unsubsidised loans the rationale for the limits is unclear. Extra lending at current rates would appear to benefit students at little, if any, cost to the government. It would reduce financial barriers and enable more potential students to go to college.

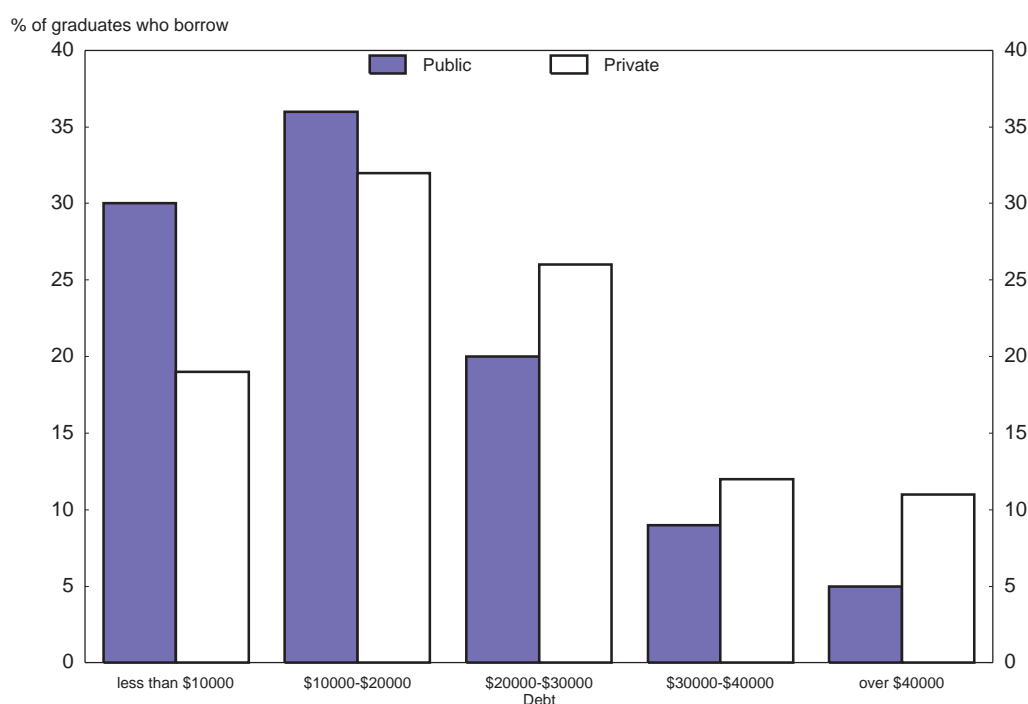
34. There are many possible objections to raising the loan limits. For example, it is often argued that expanding student loans would lead to higher college costs. One would “move up the supply curve”. This “problem” applies to any measure that increases demand for education. Though having the student financially responsible for paying, as with loans, presumably imposes more discipline than direct government subsidies.

35. A more serious concern is that default rates and hence fiscal costs might be expected to rise with debt levels. This issue was important when unsubsidised loans were introduced in 1993 – the 1990 cohort had an initial default rate of 22%. However subsequent reforms have greatly reduced the problem of defaults – that of the 2004 cohort being only 5% (much of which will probably be recovered). Although concerns about defaults justify some selectivity in borrowing, small adjustments to the interest rate would seem a more efficient solution than the current limits.

36. An expansion of student loans is often opposed on the grounds that debt burdens are already excessive. Surveys find that 59% of adults and 63% of parents of college students believe that “students today graduate with too much debt” (The Project on Student Debt, 2006). This assessment may be paternalistic, reflecting a view that students borrow irresponsibly. Otherwise, it is difficult to understand, given that default rates are low. It is true that debt burdens of over \$ 40 000 may seem daunting – but these need to be considered relative to capacity to pay. Borrowing to pay for college generates the earning power that makes loans affordable. In 2003, the median bachelor’s degree holder earned about \$ 19 000 a year more than the median high school graduate (or \$ 14 000 more, after taxes). This difference is sufficient to repay the average cost of attendance (measured as foregone earnings plus average tuition costs at a public 4-year university, or \$ 87 000 in sum), with interest, by age 33. By age 64, that premium could repay \$ 177 000 in debt at a 5% real interest rate and still have money left over.¹⁰ Compared to these earnings differentials, current debt burdens (Figure 6) seem comfortable.

10. Based on College Board, *Education Pays*, 2004, p. 10, Tables 1 and 3. The calculation ignores taxes, differential workforce participation and earnings after age 64. Allowing for these factors would change the numbers slightly.

Figure 6. Distribution of student debt levels
 Graduates of 4-year institutions; 2003-2004



Source: College Board, *Trends in Student Aid, 2006b*, Figure 4b.

Problems with loans and the rationale for income-contingent repayments

37. Even though students can afford to (and seemingly want to) repay larger loans than at present, simply making these available would not solve the problem of access to college. Many students will not take out loans because they are not confident of being able to make the repayments. Although tertiary education is highly profitable for the typical student, many students will not be confident of doing as well as the average. In 2005, the median 35-44 year-old bachelor's degree holder earned \$ 54 800. But 28% of this group earned less than \$ 40 000, while 5% earned less than \$ 20 000 (College Board, *Education Pays*, 2006c). These variations are difficult to predict in advance. Observable characteristics¹¹ of 1972 high school students going on to college only explain one-quarter of the variation in their subsequent 1986 income (Krueger and Bowen, 1993, p. 196). So it is rational for risk-averse students to avoid fixed mortgage-type repayments. If future income could be insured, that need not be a problem. But because of informational problems, ("moral hazard" and "adverse selection") insurance is unavailable. Or in slightly different terms, human capital is one of the few forms of long-term investment for which equity finance is unavailable. A closely related problem is the overly pessimistic expectations of some students. Many potential students (particularly those from low-income backgrounds where role models are rare) appear to be unaware of the financial benefits of higher education.

38. It is not clear how important the problems of risk aversion and pessimistic expectations are in economic terms. Researchers have had difficulty finding convincing evidence of their effects. Nevertheless, both policy makers and voters, in the United States as elsewhere, appear convinced that these problems are serious. In particular, they underpin the preference for heavily subsidised forms of financial

11. 108 explanatory variables from the National Longitudinal Study of the High School Class of 1972 measuring demography, family background, achievement test scores, and so on.

support (direct subsidies or Pell grants) over loans with fixed repayments. Reform of higher education finance needs to take these assessments into account. It turns out that it is possible to do so at little fiscal cost.

39. A possible solution to these problems is to make loan repayments vary with income. Successful students pay back more than unsuccessful ones. So, should a student fail to find a well-paying job after graduation, he or she need not fear being stuck with high loan repayments. Essentially, the lender bears much of the risk. Similarly, students with pessimistic expectations need not be afraid of debt – their loan repayments will also be expected to be low.

40. Economists have long argued that income-contingent loans represent an efficient and equitable means of financing higher education.¹² Countries that have introduced them include Sweden in 1988, Australia in 1989, New Zealand in 1991, South Africa in 1991, Chile in 1994, and the United Kingdom in 1997. In the United States, income contingent loans were introduced as part of the Direct Stafford loan programme in 1993. This allows borrowers to make repayments equal to 20% of the difference between the poverty rate and income, up to a ceiling. Annex 1 provides details of how income contingent loans have been implemented.

41. Experience in countries with income-contingent loans has often been favourable. For example, the loan programmes in Australia and New Zealand have been credited with the expansion of enrolments of 50% and 90% in those countries (including roughly proportionate increases in enrolment by lower-income students). Several countries have extended their programmes to substantially increase their role. And their spread to other countries seems to be continuing. However, the record also includes disappointments and reversals. Sweden abandoned its programme in 2001 (discussed below). Australia stopped lending for living expenses in 2003.¹³ And, in the United States, only 11% of borrowers with direct or consolidated loans have chosen income-contingent repayments (average of estimates from Table 4).

42. The unpopularity of income-contingent loans in the United States is an important puzzle. Whether, and how, policy should promote these loans depends on the reasons for their unpopularity. Unfortunately, those reasons are not entirely clear. One possible explanation is that the US programme is poorly designed. This has been argued by Bruce Chapman (2006), one of the architects of the Australian programme. Some of the issues he raises are discussed in Annex 1. Another possibility is that problems of risk-aversion and pessimism may be unimportant and that income-contingency is something that borrowers simply do not want. However, the strong political support for grants and subsidies suggests that these are problems that the loan system needs to address. In other countries, income-contingent repayments are commonly described as popular. That assessment is largely political, but also based on limited market data.¹⁴

12. See, for example, Kane (1999, 2006), Johnstone (2001), Barr (2001), Chapman (2006) and references cited therein.

13. The Australian loans for living expenses were implemented through an off-budget intermediary, in order to bypass accounting problems, in which loans were valued at principal rather than at subsidy cost. This proved to be overly complicated.

14. As income-contingency is typically the only repayment option within these schemes, preferences can be difficult to gauge. Nevertheless, borrowers typically have some limited choices. For example, the internal rate of return from a typical Australian income-contingent loan is about 4%, after allowance for the 25% initial premium (and assuming constant repayments over 10 years after 4 years study). This is more than double the real after-tax return on government bonds. Yet 78% of students prefer to take out income-contingent loans than to liquidate family assets and pay up-front (DEST, 2005: p89). Presumably, they value the insurance provided by the income-contingent repayments.

43. A more important factor behind the unpopularity of income-contingent repayments in the United States may be inertia. As research in a variety of different settings has shown, individuals tend to remain with the default option when given choices, particularly for complicated financial decisions (see Beshears *et al.*, 2006).¹⁵ This may explain the choices shown in Table 4, where 72% of borrowers in the direct loan programme stick with the default or standard repayment option – which makes equal monthly payments over 10 years. Only 7% choose income-contingent repayments. However, when borrowers are given more time and the opportunity to reflect on their repayments, the popularity of the income contingent option rises. When loans are consolidated (bundled together), 26% choose this option.

Table 4. Percentage of borrowers choosing different repayment options, 2000

Repayment option	Direct loans	Consolidated loans
Standard (default)	72	43
Income contingent	7	26
Extended	6	12
Graduated	15	19

Source: US Department of Education and the US General Accounting Office (2001, Appendix IV).

44. Still, even with consolidated loans, the default remains substantially more popular. That is puzzling, but not necessarily a reliable guide to borrower preferences. For complicated decisions, borrowers economise on information costs by choosing the most popular option. This leads to standardisation of financial products and makes it possible for markets to be locked into an undesirable equilibrium.

45. Reinforcing the importance of inertia, many students are uninformed of their options. In one survey of law students two-thirds of respondents had not heard of income-contingent repayments (Schrag, 2001, cited in Chapman, 2006). These responses are consistent with discussions with financial aid advisors. However, they are puzzling given the ready availability of information. A related problem is the misleading advice that students are given about loan repayment. It is common for interest payments to be summed at a zero nominal discount rate and hence for borrowers to be told that deferring payments “increases” them – even when the present value (or even the real value) of interest payments declines.¹⁶ This mistake is not confined to student loans but is standard financial “advice” in the United States. Obviously, better information and advice would be helpful, although whether this would make much difference is unclear.

46. More broadly, it may be that contingent repayments are too complicated to understand and compare with alternatives. Accordingly, there is a good case for making income-contingent repayments the default. For complicated decisions, individuals will often be better off if the default is the “best” option, even if that is not the simplest or most familiar alternative. If marginal students are as risk-averse and uninformed as the advocates of subsidies and Pell grants contend, then the income-contingent option would be much better for them.

15. In one case study, changing a company pension plan from an “opt-in” to an “opt-out” raised the enrolment rate from 49% to 86%. (Madrian and Shea, 2001).

16. A typical (though otherwise praiseworthy) example is the Department of Education brochure *Consolidation – A Smart Choice for In-School and Graduating Borrowers* (undated) which advises students that each form of extended payments “results in higher overall costs of borrowing”. In particular, the “Income Contingent Repayment is the most expensive option in the long term (though) it is a good way to avoid default”.

47. A further step would be to make income-contingent repayments the only option, as in other countries and as proposed by Gary Becker (2006), among others. This would reduce adverse selection (discussed below) and simplify decision making. Economists who believe individuals frequently err in the face of complicated financial decisions argue that it would make borrowers better off. However, that argument is speculative (albeit plausible) as it applies to student loans. In the absence of evidence that adverse selection or borrower mistakes are serious problems, providing choices, as in the United States, seems preferable.

48. The economics literature emphasises two potential problems with income contingent loans. “Moral hazard” means that graduates may work less hard or avoid employment in highly paid jobs due to higher effective marginal tax rates. “Adverse selection” means that students who tend to choose income contingent repayments will be those with poor prospects, while those doing professional courses, for example, will try to finance their studies in other ways. In assessing these problems, it needs to be remembered that they also afflict alternative forms of government support. For example, means-tested grants and the taxes required to finance general subsidies also have undesirable incentive effects. Adverse selection means that the loan scheme may not be able to run at a profit – though, as long as there is some repayment, the cost would still be less than grants or subsidies. These concerns are important to the details of policy implementation, but they do not seem to have been sufficient to prevent the extension and spread of income contingent loans in other countries. A possible exception is Sweden’s abandonment of income-contingent loans in 2001, which was partly out of concern for moral hazard effects. But that was in a context of marginal tax rates far in excess of those in the United States. Otherwise, evidence on the importance of these problems is limited. Making income contingency the default would broaden the pool of borrowers and thereby presumably lessen adverse selection. However, increasing loan limits could give rise to new problems. This is an argument for proceeding cautiously, with regular review of programme parameters.

Other issues relating to student loans

49. The House of Representatives has recently passed legislation reducing interest rates on subsidised Stafford loans. In opinion polls, 88% of Americans support this. However, this proposal seems to be unnecessary and costly, with the subsidy not being well directed from the perspective of improving access. Since most dependent Stafford loan holders already borrow up to the limit, the important constraint is not the net return but the availability of finance. Indeed, increasing subsidies makes it more difficult to raise lending limits.

50. The interest rate on Stafford loans is fixed in legislation at 6.8%. Accordingly, subsidy levels will change, in unintended ways, with changes in market interest rates. This seems to be a simple design flaw that needs to be rectified; for example, by tying the rate to the long term bond rate. In the meantime, variations in subsidy levels may provide useful information.

51. A bigger issue is the co-existence of the direct and guaranteed loan systems. One might hope that this dual system could be rationalised. A joint Department of Education and General Accounting Office study (2001) discussed how this might be done, including for income-contingent repayments. However, the appropriate role of government *versus* private lenders is not clear. It depends, for example, on the importance of adverse selection and moral hazard, which are not known. There are arguments for maintaining the dual system until more is known. That said, the current subsidies to private lenders seem clearly excessive. Although precise estimates are controversial, substantial rent-seeking (marketing, lobbying, etc.) and pressures to break the law suggest that private lenders are receiving more than they need. The House of Representatives and the Administration have both proposed reductions in these subsidies, which is to be commended.

Pell grants

52. Instead of raising loan limits, as suggested above, perhaps the most widely supported proposal for dealing with financial barriers is to increase Pell grants. These are given to low-income families to pay for their educational expenditures. In 2005-06, the Federal and State governments provided \$ 19 billion and \$ 7 billion respectively in grants. Most of the Federal grants were through the Pell Grant programme. This provided \$ 13 billion per year to 5.3 million students, at an average payment of \$ 2 400.¹⁷ As noted earlier, the Spellings Commission called for an increase in Pell Grants by about two-thirds. This proposal has been warmly received by the Administration, Congress and the higher education community. However, how it might be financed has not yet been explained.

53. The objective of Pell grants is to facilitate access to higher education for children from lower income families. As previously discussed, this objective seems appropriate from both an efficiency and equity perspective. However, whether grants are effective in addressing this objective is doubtful. Hansen (1983), Kane (1994), Manski (1992-93), and Kitmitto (2004) found that Pell grants had little or no impact on attendance, though Seftor and Turner (2002) found that they increased attendance for students between 22 and 35 years of age.¹⁸ These seemingly weak effects contrast with strong evidence of responsiveness to tuition costs noted previously. There are many possible reasons that may help to reconcile these findings, including the inadequate level of grants, their complexity, their gradually phased-in implementation and the tendency of institutions to offset Pell grants by reducing their own needs-based aid. Proposals to overcome some of these obstacles are discussed below.

54. For a student from a family with annual income below \$ 15 000, the Pell grant programme provides a grant of \$ 4 050. The Administration's 2008 Budget proposes raising this to \$ 5 400 over the next five years. For better-off students, the grant amount is reduced according to income and assets. However, as noted above, living expenses are much more than this, as is tuition at most 4-year institutions. So, by itself, Pell grants do not make going to college affordable. Students still need to borrow, work, or rely on their families. When, as is often the case, these options are limited, students may choose not to go to college.

55. The inadequacy of Pell grants may suggest that they should be raised. The main difficulty however, and indeed the main problem with grants in general, is their fiscal cost. Grants are financed by higher taxes, which are bad for the economy and politically unpopular. Hence although Congressional representatives are attracted in principle to increasing grants, the amounts being proposed will still not make college affordable.

The distributional implications of grants are also problematic. Grants represent a transfer to students who are expected to have high lifetime incomes. Even though dependent students come from poorer backgrounds they, as individuals, are better-off than most. Independent students (the majority of Pell grant recipients) need not come from poor families, though they have had one year of low reported income and assets.

56. Pell grants also distort price signals and impair efficiency. Some of these effects are straightforward. For example, the means-testing of income provides a disincentive to work. Other effects are more subtle. For example, the marginal "tax rate" on assets is 5.6%. This applies each year a child is in college.

17. All estimates are from College Board (*Trends in Student Aid*, 2006b). Other large grant programmes in 2005-06 include \$ 4 billion to veterans, \$24 billion by institutions (essentially tuition discounts), and \$9 billion private and employer grants.

18. Kane (2006, p. 1389), GAO (2005, p. 28) and Long (2007) provide overviews of the research.

So a family with two children undertaking four-year degrees might lose nearly 50% of their accumulated savings. Some assets (529 saving accounts) have borne marginal tax rates of 100% and higher.¹⁹ Offsetting this, housing equity (like retirement savings accounts) is not counted within assets – so this tax is easy (though not costless) to evade by paying down a mortgage prior to college, then refinancing after graduation to recreate the original portfolio. On average, Dick and Edlin (1997) estimate that means-testing raises marginal tax rates on income between 2% and 16% and marginal tax rates on savings between 8% and 26%.

Simplifying the means-test

57. A commonly suggested explanation for the apparent ineffectiveness of Pell grants is their complexity. The main form for applying for aid, the FAFSA, is considerably longer than the federal income tax form, the complexity of which is already at the top of tax reform agendas. It asks many more questions, in intrusive detail, and requires that records be created and kept that would otherwise not be needed. Partly as a result, many eligible students do not even apply. King (2004) estimates that 850 000 students who would have been eligible for Pell grants in 2000 did not complete the necessary forms. Recognising these problems, the Administration and Congress have made simplifying the application process a priority. Several steps in this direction are noted in Box 1, and the College Made EZ Act, currently under consideration by Congress. These involve a number of worthwhile administrative changes, including streamlining the application process and greater sharing of information with the IRS. However, it seems desirable to go further.

58. Many of the questions on the FAFSA cover means-test criteria that are of little importance. Applicants are asked about IRA rollovers (an asset management tool of benefit only to the very wealthy), welfare benefits (that are a function of other items on the form) and rare forms of income like foreign income and living stipends for clergy. Worse, because the form is complicated, many students (for example, 90% of those eligible for an “automatic zero”) answer questions that have no effect on their eligibility. Dynarski and Scott-Clayton (2006) estimate that deleting 80% of the financial questions on the FAFSA would change the Pell grant by less than \$500 for 88% of dependent undergraduates and lower expenditure by 0.2%.

59. A further worthwhile simplification would be to abolish the assets test. As a general principle, taxing saving involves serious distortions, as the recent Tax Panel emphasised. Furthermore, the administrative burden of the assets test is relatively large – requiring records that would not be kept for tax purposes. However, this would be more costly, raising expenditure by 8%. Together with the deleting of unimportant questions noted above, Dynarski and Scott-Clayton estimate that removing the assets test would change Pell grants by less than \$ 500 for 86% of their sample.

60. A closely related problem has been a lack of transparency. Many families do not know and are not able to calculate their likely eligibility for aid. Unlike a tax form, the FAFSA does not indicate a bottom line – how much aid the student might expect. Rather, the form is mailed away for processing and the student is notified several months before college enrolment. This notice is too short for families to increase their savings or to apply to a different range of colleges.

61. To clarify aid eligibility (and reduce application time), an internet-based tool for calculating eligibility became available on 1 April 2007. A more radical solution, suggested by Dynarski and Scott-

19. Dynarski (2004). The Administration’s 2008 budget proposes exempting 529 accounts. For the first seven years of their existence, Coverdell savings accounts (a tax vehicle intended to encourage saving for college!) had an effective marginal tax rate of 120%. Although that was fixed in 2004, it indicates the difficulty of implementing sensible means-tests.

Clayton, would be to simplify the means test sufficiently that information on Pell grant eligibility could be put on a postcard. That alternative could be somewhat costly. Although the details are debatable, they may have substantial efficiency and simplification advantages.

The appropriate role of grants

62. Loans have similar objectives to grants but avoid many of their problems. In particular, because they are repaid (in part or full), they have less cost to the budget and the taxpayer. Or, equivalently, for a given fiscal cost, loans can put substantially more cash in the hands of students than can grants. Loans involve less redistribution from the general taxpayer to well-off college graduates. Loans involve less distortion of prices. And for unsubsidised loans, no complicated means-testing is necessary. Grants have some advantages over loans with fixed repayments, which are unattractive to risk-averse or pessimistic students, but that does not extend to income-contingent loans.

63. Were a good system of loans in place, with high limits and income-contingent repayments, then grants would no longer be needed to overcome financial barriers. However, because of other market failures, a role for grants would remain, though narrower than at present.

64. Perhaps the most common argument for preferring grants over loans is to deal with those potential students who would not ordinarily consider attending college. It is argued that cash grants focus their attention in a way that more complicated loans do not. However, this argument only justifies grants for the first year of college. After that, information would be both salient and available. Furthermore, it seems to support payments to a more narrowly defined group: students from poor communities without role models. Even then, provision of information, possibly through extra financial aid counsellors, would seem a more directly targeted approach.

65. Means-tested grants can also be justified by externalities (the benefits to others that recipients provide), like the provision of role models in their communities and diversity at college. However, these arguments only apply to students because they are unusual – so would not justify widespread subsidies. Furthermore, diversity benefits to other students are already addressed by grants (tuition discounts) from colleges. In economic terms, this internalises the externality. That is, those who benefit from the diversity (other students) pay for it, which seems appropriate. Finally, means-tested grants can also be justified by society's desire to encourage income mobility.

66. The above arguments for means-tested grants apply to students from low-income families but not necessarily to “independent” students. Independent students are either married, aged over 24, veterans, graduate or professional students, or have children. They need not come from a disadvantaged background. In 2004-05, they accounted for 57% of Pell grant recipients. The rationale for assisting these students rests on capital market failure, which is more efficiently and equitably addressed through loans rather than grants. Furthermore, arguments for grants based on externalities and information also suggest that high school and/or neighbourhood characteristics may be more relevant than individual or family characteristics. Directing grants accordingly would have the added advantage of simplifying the application process.

67. Overall, were a good system of loans in place, then the costly increases in Pell grants that have recently been proposed would seem to be unnecessary. As noted in Box 1, a review of the federal financial aid system is being commissioned. As part of that, the role of grants should be reconsidered with a view to focussing on informational problems and externalities. That would presumably involve fewer payments. In particular, grants beyond the first year of college and to independents could be reduced.

Tax relief

68. Federal and state governments also finance higher education through a series of tax breaks for students and their families. Table 5 shows federal tax expenditures on education for 2006. Unfortunately, estimates that distinguish tertiary education from primary and secondary education are not available. Not included in the table is the deductibility of state and local taxes used, *inter alia*, to fund education. Although arguably the largest federal tax expenditure on education, issues relating to state and local spending are discussed in the following section. The Lifetime Learning Tax Credit and the HOPE tax credit provide tax credits of up to \$ 2 000 per year per person for the costs of higher education. Alternatively, individuals can deduct from their taxable income up to \$ 4 000 per year in higher education expenses. The other main concession aimed at promoting access to higher education is the deductibility of interest paid on student loans. These four “tuition incentives” add up to about \$ 9 billion per year in foregone government revenue, about 1% of total Federal tax expenditures. In 2002, 16 million tax filers claimed one of these preferences. There are also several smaller measures and others that might be considered as addressing other objectives. The parental personal exemption for students aged over 18 (worth \$ 2.5 billion) is sometimes considered as promoting access to education, though others consider it a horizontal equity measure. Total federal tax expenditures on education (not including deductibility of state and local taxes) add up to \$ 19 billion.

Table 5. Estimates of federal income tax expenditures on education, 2006
(In millions of dollars)

HOPE tax credit	3 650
Lifetime Learning tax credit	2 340
Deduction for higher education expenses	1 840
Deductibility of student-loan interest	800
Subtotal (tuition incentives):	8 630
Deductibility of charitable contributions (education)	3 680
Parental personal exemption for students age 19 or over	2 500
Exclusion of scholarship and fellowship income	1 450
Exclusion of interest on bonds for private non-profit educational facilities	1 160
Exclusion of employer-provided educational assistance	590
State prepaid tuition plans	540
Exclusion of interest on student-loan bonds	300
Special deduction for teacher expenses	150
Credit for holders of zone academy bonds	130
Education Individual Retirement Accounts	90
Exclusion of interest in savings bonds redeemed to finance educational expenses	20
Discharge of student loan indebtedness	20
Total	19 260

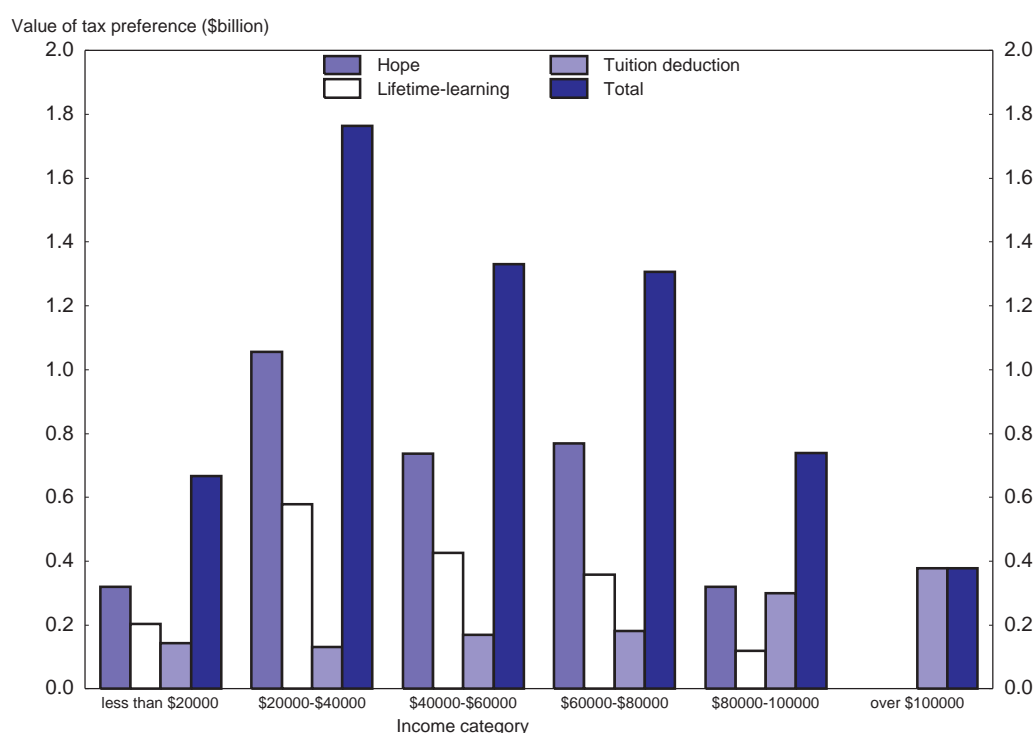
Source: 2007 budget. Analytical Perspectives, p. 228.

69. The deductibility of student interest payments differs from the other tuition incentives in that it affects loan repayments, rather than current expenses. One feature of this deduction is that it phases out above an Adjusted Gross Income of \$ 50 000 (for singles, \$ 100 000 for couples). This more than halves real interest payments for those on lower post-graduation incomes²⁰ which gives all student loans an element of income contingency. The student loan deduction probably does not boost access much – being received well after graduation. However, it does affect perceived interest costs. Its desirability needs to be considered in conjunction with the parameters of income contingent loan repayments and the overall level of subsidy for student loans. The other tuition incentives, which happen to be much larger, are harder to justify. One problem with the tax concessions is that they mainly benefit middle income earners. Because

20. The real interest rate above the threshold is 4% (6.8% minus 2.8% inflation). Below the threshold, it is 1¾ per cent (6.8 x 0.65 minus 2.8), assuming a marginal (federal plus state and local) income tax rate of 35%.

low income families have low marginal and average tax rates, they benefit little from deductions or non-refundable credits. And the formula for calculating the credits reduces their value as Pell grants increase. Accordingly, about 60% of the value of the three tuition-related preferences flows to families with incomes of more than \$ 40 000 (Figure 7). This is not where the main barriers to access are. Only 11% of the value of the tax preferences went to families with incomes below \$ 20 000. In contrast, 9% of the value of Pell grants to dependent students went to families with incomes above \$ 40 000, while 48% went to families with incomes below \$ 20 000. (GAO, 2005, Table 4). Apart from the obvious equity problems, the credits are not a cost-effective instrument for promoting access.

Figure 7. Distribution of tax preferences by income, 2002



Source: GAO, 2005, Table 6.

70. Another problem is timing. For tuition-related expenses, families do not receive the benefits of the concessions till the year following their outlay. This clearly reduces their effectiveness as a means of relaxing credit constraints.

71. The interaction with the financial aid system is cumbersome. The US government has one programme (grants) that carefully targets assistance at lower income families. And another (tax concessions) that targets it at middle-income families. Where one programme leaves off, the other kicks in. (See, for example, Table 1 in Kane, 1997). Each programme incurs significant costs to prevent benefits flowing to certain recipients – but then another programme delivers benefits to those recipients. Having two programmes duplicates administration, forms, and bureaucracy.

72. And it adds complexity, which is perhaps the clearest problem with the tax concessions. The provisions are complicated, require extensive record keeping and interact in non-obvious ways. As one example, they each define qualified education expenses differently. Tax analysts say they require an unusually large investment of knowledge and skill (GAO, 2005, p. 20). Accordingly, many eligible tax payers do not claim them. A GAO Survey found that 27% of eligible tax filers did not claim either the tuition deduction or a tax credit. In doing so, they paid an average \$169 more than required, with 10%

paying \$ 500 more than required. A further 21% did not claim as much as they could. About 50% of the tax returns that could have claimed more were prepared by *professional* tax preparers (GAO, 2005). In a subsequent survey of professional tax preparers one third failed to claim full education benefits (GAO, 2006).

73. In theory, education can be viewed as an expense incurred in earning an income. If the income is taxed, with no deduction for the expense, then the activity will be discouraged. Hence the deductions can be supported as removing a distortion. In practice, this textbook argument is rarely advanced in public: instead, the credits are justified as promoting access. This is partly because the argument does not apply in more complicated models with credit constraints that prevent borrowing. Then activity is restricted anyway, with credit constraints providing a barrier to entry that leads to super-profits. In that case, the deductions boost super-profits rather than increase investment. Loans would relax the binding constraint in a more cost-effective (and equitable) manner.

74. Overall, the recent tax concessions for education are popular among voters and unpopular with many in the higher education community. Policy makers should seek opportunities for simplifying and cutting them. The introduction of more cost-effective means of improving access might provide a suitable occasion.

State provision

75. Although grants and loans are high on the current political agenda, the largest government intervention in financing higher education is direct subsidies. Direct provision of higher education through locally and state-supported colleges and universities amounted to \$ 160 billion per year in 2001-02. This represented 9% of total state and local government spending and 1.5% of GDP. (*NCES Digest 2006*, Tables 28, 29 and 30). These institutions offer substantially subsidised tuition for in-state students and somewhat less subsidised tuition for out-of-state students. In 1996-97 the average educational expenditure on public four- year institutions was \$ 13 118 per full-time equivalent student.²¹ In contrast, the average published tuition fee at these institutions was \$ 2 975. So students without discounts were, on average, paying 23% of the direct costs of their education. Students with grants, of course, paid less.

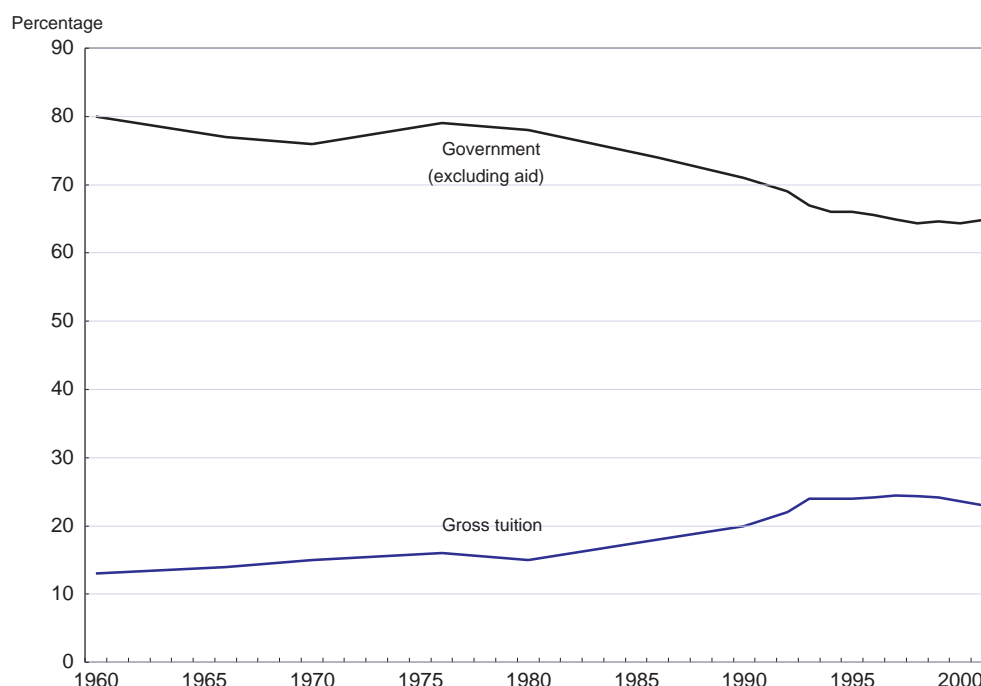
76. Over the last two decades, there has been an increasing squeeze on the budgets of public colleges and universities. Government spending per student has increased, but apparently not by enough to match the growing demand. The shortfall has been partly made up by large increases in tuition charges, as shown in Figure 8. This increasing reliance on private financing is an international development. In the OECD, the share of tertiary expenditures financed privately has risen from 19% in 1995 to 24% in 2003 (OECD, 2006), though that partly reflects changes in the composition of countries within the sample.

77. Despite higher tuition, expenditures at public institutions have not kept up with those in the private sector. Since 1980, expenditures per student at *public* four-year institutions have grown about 2% per annum faster than the consumer price index (CPI). Although a good price index for education is not available, it seems that real expenditures were approximately flat in level terms and declining as a share of real income. That is despite a high income-elasticity of demand for higher education. In contrast, expenditures per student at *private* four-year institutions have grown an average 5% a year faster than the CPI. Hence, while private institutions have been increasing staff-student ratios, public institutions have been reducing them. Similarly, private faculty salaries have been outstripping those in the public institutions. Reflecting this, available measures suggest that the quality of education at public institutions has been deteriorating relative to that at private institutions (Kane, 2006, p. 1375).

21. Kane (2006, p. 1372). This excludes scholarship and fellowship spending (a transfer from one group of students to another) and expenditures of auxiliary operations like hospitals and dormitories.

78. The squeeze on public funding seems to reflect growing pressure on state government budgets (in particular from Medicaid) interacting with a finite willingness of many taxpayers to fund investments that benefit those who are better off. These distributional concerns are clearest in states pursuing “high tuition-high aid” strategies, such as Michigan and Virginia, where tuition has risen sharply while public funds have been redirected toward student financial aid. International experience and the prospect of large increases in Medicaid expenditure both suggest that the pressure on public expenditures will continue. So consideration of alternative methods of financing will probably increase in importance.

Figure 8. Share of revenue of public tertiary institutions¹



1. Revenue does not include sales and services.

Source: Mcpherson and Shapiro (2006, p. 1408); NCES (*Digest of Education Statistics, 2005*; Table 329).

79. The desirability of the decline in the share of public support is controversial. Direct provision of higher education by state governments is usually supported on grounds of “improving access” or “removing financial barriers”. However the spending is not directed towards students in difficulty. More targeted assistance, such as grants or loans, could achieve greater access at lower cost. Of course, reducing subsidies, in the absence of improvements to loans or grants, impairs access.

80. General subsidies are also supported on grounds of externalities. That is, there are benefits to society in addition to the private benefits enjoyed by the individual graduate. Examples include taxes, innovation and culture. However, this argument does not convincingly support subsidies at a state level. On the margin, 70% of students educated by public institutions leave the state after graduation (Bound *et al.* 2004)²² So the taxpayers who finance these graduates’ education recoup little of the return.

22. This is consistent with the observation that most graduates remain in the state where they studied. For example, Bradburn, Nevill and Cataldi (2006) find that 70% of 1992/93 graduates were still living in the same state where they received their bachelor degree ten years later. Bound *et al.*’s estimate represents the *marginal* effect of changes in the graduation rates on the stock of graduates in a state, which is the relevant measure for capturing externalities. The latter number, in contrast, is an average ratio. Were some states to

Nevertheless, the argument has more force at a federal level. In particular, a sizeable body of research suggests that encouraging higher education is good for economic growth (see Section 2.3 of Chapman, 2006). However, it provides little guidance as to how large an effort is warranted, and even less on the appropriate means of subsidy (that is, whether through direct provision, grants or loans).

81. Costs need to be weighed against these benefits. Many observers believe the subsidies are inequitable, because they benefit students who disproportionately come from well-off families. In 1994, 61% of children from high-income families enrolled in a public postsecondary institution, in contrast to 34% of children from low-income families (Akerhielm *et al.*, 1998, Table 4). Furthermore, these students subsequently go on to well-paid jobs, as noted earlier. However, judgments on equity depend on how the subsidy is financed. Although state government revenue tends to come from taxpayers who, on average, earn less than graduates, it is less clear whence marginal revenue comes.

82. Inefficiencies arise from distorted price signals. For example, there is less pressure on public universities to control costs or to provide a service of value than would be the case were they subject to stronger market forces. In particular, subsidies of within-state tuition restrict interstate competition. Students have less incentive to seek or expect value for money. And the continued squeeze on finances is likely to continue impairing quality. Arguably, providing subsidies to individuals rather than institutions would address many of these inefficiencies. (Payments to individuals, which include Pell grants and subsidised loans, are often referred to as vouchers).

83. Balancing these arguments is difficult. Conventional analysis would suggest that subsidies should be a federal rather than state responsibility; that they should be paid to individuals rather than institutions; and, possibly, that they could take the form of debt-forgiveness rather than cash grants. However, the economic literature provides little guidance on the central question of the level of subsidy. From an international perspective, Figure 1 implies that the public sector bears a smaller share of the costs of financing higher education in the United States than in many other OECD countries, even when allowance is made for the limitations of the data.

84. Public debate on these questions is hampered by the dominating issue of access. Were a good system of loans in place, then direct government subsidies would no longer be justified to overcome financial barriers. Some government subsidy would still be warranted for reasons of externalities. There may well be more efficient and equitable means of delivering that subsidy than the current system of state government provision. How such a change might be coordinated is unclear. Public opinion will (appropriately) resist reductions in state subsidies while barriers to access remain important.

expand their colleges, Bound *et al.*'s estimate indicates the new graduates would disperse around the nation and the average ratio would decline.

Box 2. Recommendations on financing higher education

Income-contingent student loans represent the most efficient and equitable means of overcoming financial barriers to education. Although current loan programmes permit income-contingent repayments, few borrowers choose this option, partly because of poor information.

- Greatly raise limits on Stafford loans, especially for unsubsidised direct loans, so that they cover the full cost of study.
- The default repayment plan should be income-contingent.
- Borrowers who are worried about their future income should be advised to make income-contingent repayments.

Were a good system of loans in place, then the costly increases in Pell grants that have recently been proposed would be unnecessary.

- The role of the grants should be reconsidered with a view to focussing on informational problems and externalities. That would probably involve fewer payments. In particular, grants beyond the first year of college and to independent students could be reduced. Grants should target high school or neighbourhood characteristics rather than those of families.

The Administration and Congress plan to simplify the application process for Pell grants, which is to be commended.

- Remove the assets test and unimportant means-testing criteria. Provide early notification of estimated grant eligibility.

Tax concessions for higher education are a regressive, complicated and cost-ineffective means of promoting access. These problems outweigh the theoretical advantages of the concessions.

- Simplify or abolish tax preferences for higher education expenses.

There are many further details of implementation where financial aid could be improved.

- Reconsider private guaranteed loans, with a view to further reducing their subsidy and encouraging income-contingent payments.
- The forgiveness period for income-contingent loans should be reviewed, with consideration being given to varying the repayment period with debt levels.
- The interest rate on Stafford loans should vary with the long-term bond rate, so as to prevent unintended changes in subsidy levels.

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ANNEX 1

IMPLEMENTATION OF INCOME CONTINGENT LOANS

85. Table A1 indicates how income contingent loans have been implemented in four illustrative countries: Australia, New Zealand, the United Kingdom, and the United States. At the risk of oversimplifying (there are exceptions to most of the following generalisations) programmes in these and other countries typically specify a threshold below which repayments are not required. In the United States, this is the poverty rate: for a single borrower, \$9 800 in most states. Repayments are usually set as a fraction of the difference between income (in the United States, adjusted gross income) and this threshold. The student's outstanding liability then increases in accordance with inflation or interest rates.

Table A1. Income-contingent student loan schemes

	Australia	New Zealand	United Kingdom	United States
purpose of loan	tuition fees	tuition fees and living costs	tuition fees and living costs	tuition fees and living costs
Income threshold at which payments start	A\$ 38 000 (US\$ 30 200)	NZ\$ 17 000 (US\$ 12 000)	£ 15 000 (US\$ 29 500)	\$ 9 800
Threshold as % of average wage	75%	40%	53%	34%
repayment rate (% of income above threshold)	4% rising to 8% (on total income)	10%	9%	20% (capped)
interest rate	an initial premium of 25%, then zero real	zero nominal while student, thereafter 7% p.a.	zero real	A 3% fee, then 6.8% p.a.
Debt forgiveness	Death	Death	Age 65	25 years
Memo items:				
Average tuition fee 2003-04:	US\$ 3 800	US\$ 2 500	US\$ 1 800	US\$ 8 700
Graduation rates, 2004				
Tertiary type A	46%	48%	39%	34%
Tertiary type B	n.a.	21%	16%	9%

Notes: Data for US relate to direct unsubsidised Stafford loans originated after June 2006.

Graduation rates are percentage of tertiary graduates to the population at the typical age of graduation. From *Education at a Glance* (2006, Table A3.1). In the United States, type A courses are academically oriented bachelors, master, associate and professional degrees. Type B are vocationally oriented associate degrees. Tuition fees are for national and in-state students; whereas Figure 2 includes some foreign student fees (*Education at a Glance*, 2006, Table B5.1).

Other Sources: Usher (2005); Thorn (2005); <http://www.ed.gov/offices/OSFAP/DirectLoan/RepayCalc/dlindex2.html>.

86. Details for the United States given in the table apply to students in the Direct loan program. Guaranteed loans have a somewhat different scheme and the option of changing plans if they wish to make income contingent repayments. The US programme differs from those in other countries in several ways:

- Perhaps most important, repayments in the United States are much higher. The US threshold is lower, and the repayment rate and interest rate are both higher. This reflects higher tuition costs, lower subsidy levels and the coverage of both tuition and living costs.²³
- In the United States, income-contingency is one of four possible repayment option whereas in other countries it is typically the only form of delayed payment. Choice poses a potential problem of adverse selection. To mitigate this, repayment rates in the United States system are capped – they cannot exceed a specified limit.
- In the United States, repayments are collected by the lender whereas in other countries this is the responsibility of the tax agency (though US repayments are verified with IRS records).
- Income includes spouse's income in the United States but only that of the borrower elsewhere.
- In the United States, debts not repaid after 25 years are forgiven. The forgiven debt is taxable income, giving rise to a potentially large tax liability in the final year.

87. It is not clear that any of the above features help to explain why income-contingency is popular in other countries but not the United States. High repayments, for example, apply also to other forms of student loan in the United States, so this does not explain why borrowers prefer those forms. Nor is it clear that any of the unusual features of the US system represent design flaws or “anomalies”.

88. Chapman (2006) and others suggest that use of the tax agency lowers administrative costs. However, US authorities consider this to be unimportant, given that they have access to IRS data. Administration costs for direct loans (1.45% of originating principal a year according to the CBO, 2005) appear to be substantially higher than those in Australia (2-3% of collections, so presumably a fraction of a per cent relative to original liability; Chapman, 2006, p. 1494). That may reflect the wider choices given to US borrowers.

89. It is true that, as Chapman notes, measuring income on a family rather than individual basis will give rise to a “marriage penalty”. But this feature seems desirable from an insurance perspective. Furthermore, it reduces one of the more serious instances of moral hazard and adverse selection affecting other countries' schemes – their subsidy of borrowers expecting to leave the paid workforce to rear children.

90. The issue of forgiveness is important but complicated. If the loan scheme simply deferred payments (at a market interest rate) rather than reduced them – as the “income sensitive” option for guaranteed loans approximately does – it would only insure annual cash-flow. Deferring payments at a subsidised rate (as in other countries) or forgiving debt (as in the US income-contingent plan) means that life-time income is also insured. That is a central part of the appeal of income-contingent loans to prospective borrowers and policy makers. However, this debt remission increases fiscal costs, unless the interest rate is increased to compensate. The counterpart is that it provides a convenient mechanism for subsidising the loan, should that be desired. It creates a moral hazard. And it creates an incentive to borrow excessively – because the marginal dollar borrowed is more likely to be forgiven (or repaid in the distant

²³ However, time to repayment is similar. Chapman calculates that typical repayment in Australia (using 2001 parameters) is 9-12 years, which officials suggest is also a typical repayment period in the US

future, with a low present value). How policy-makers should trade off these concerns will depend on empirical judgements based on scant information.

91. Nevertheless, a puzzling feature of the US system is that the forgiveness period (25 years) is independent of the level of debt. So borrowers with small loans repay their debt in full, whereas those with large loans may expect a sizeable subsidy. Extending the period of repayment as debt increases would remove these disparities and reduce incentives to excessive borrowing. Even more puzzling is the taxation of forgiven debt. Although forgiveness is intended to make loans attractive, it is often described as having the opposite effect, because of the tax. Liquidity-constrained borrowers may find income-contingent loans more attractive if forgiveness occurred later, even though that increases the present value of their after-tax payments. There are several possible solutions to this problem, including exempting forgiveness from tax, as is done, for example, for teachers in disadvantaged schools. Another option would be to forgive debts at death.

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